RECEIVED
CENTRAL FAX CENTER
OCT 31 2007

AMENDMENTS TO THE CLAIMS

1.-37. (Cancelled)

38. (Currently Amended) A supported, treated catalyst system produced by a process comprising the steps of:

(a) forming a supported bimetallic catalyst system comprising a first catalyst compound and a second catalyst compound, wherein the first and second catalyst compounds are supported on a common support; wherein the common support is an inorganic oxide; and

(b) contacting the supported bimetallic catalyst system of (a) with at least one ~~methylalumoxane-activatable~~ additional catalyst compound.

39. (Previously Presented) The supported, treated catalyst system of claim 38 whercin the supported bimetallic catalyst system further comprises an activator.

40. (Currently Amended) The supported, treated catalyst system of claim 39 wherein the support is selected from the group consisting of silica, alumina, silica-alumina, ~~magnesium chloride, graphite,~~ and mixtures thereof.

41. (Original) The supported, treated catalyst system of claim 39 wherein the activator is selected from the group consisting of: a Lewis acid, an alkylaluminum compound, and an ionic activator.

42. (Original) The supported, treated catalyst system of claim 41 wherein the Lewis acid is methylalumoxane.

43. (Original) The supported, treated catalyst system of claim 41 wherein the alkylaluminum compound is trimethylaluminum.

44. (Original) The supported, treated catalyst system of claim 38 wherein the supported bimetallic catalyst system comprises a first and a second transition metal.

45. (Currently Amended) The supported, treated catalyst system of claim 44 wherein the at least one ~~methylalumoxane-activatable~~ additional catalyst compound comprises a transition metal that is the same as the first transition metal.

46. (Currently Amended) The supported, treated catalyst system of claim 44 wherein the at least one ~~methylalumoxane-activatable~~ additional catalyst compound comprises a transition metal that is the same as the second transition metal.

47. (Currently Amended) The supported, treated catalyst system of claim 44 wherein the at least one ~~methylalumoxane-activatable~~ additional catalyst compound comprises a transition metal that is different from both the first and second transition metals.

48. (Previously Presented) The supported, treated catalyst system of claim 38 wherein the second catalyst compound comprises a metallocene catalyst compound.

49. (Previously Presented) The supported, treated catalyst system of claim 48 wherein the metallocene catalyst compound is represented by a formula selected from the group consisting of:

$Cp^ACp^BMX_n$;

$Cp^A(A)Cp^BMX_n$;

$Cp^A(A)QMX_r$;

$Cp^AMQ_qX_w$;

$Cp^AM(W_2GZ)X_y$; and

$T(Cp_AM(W_2GZ)X_y)_m$

wherein: M is a metal atom selected from the group consisting of: Group 3 to Group 12 metal atoms;

Cp is a ligand selected from the group consisting of: substituted or unsubstituted cyclopentadienyl ligands and ligands isolobal to cyclopentadienyl;

X is selected from the group consisting of: halogen ions, hydrides, C_1 to C_{12} alkyls, C_2 to C_{12} alkenyls, C_6 to C_{12} aryls, C_7 to C_{20} alkylaryls, C_1 to C_{12} alkoxys, C_6 to C_{16} aryloxys, C_7 to C_{18} alkylaryloxys, C_1 to C_{12} fluoroalkyls, C_6 to C_{12} fluoroaryls, C_1 to C_{12} heteroatom-containing hydrocarbons and substituted derivatives thereof; amines, phosphines, ethers, carboxylates, dienes, and hydrocarbon radicals having from 1 to 20 carbon atoms;

(A) is a bridging group;

Q is a heteroatom-containing ligand;

T is a bridging group selected from the group consisting of C_1 to C_{10} alkylenes, C_6 to C_{12} arylenes and C_1 to C_{10} heteroatom containing groups, and C_6 to C_{12} heterocyclic groups;

G is selected from the group consisting of carbon and silicon;

W is selected from the group consisting of-O--; --NR--; --CR_2-- and --S--;

R is selected from the group consisting of C_1 to C_{10} heteroatom containing groups, C_1 to C_{10} alkyls, C_6 to C_{12} aryls, C_6 to C_{12} alkylaryls, C_1 to C_{10} alkoxys, and C_6 to C_{12} aryloxys;

Z is selected from the group consisting of R, --OR, --NR_2, --CR_3, --SR, --SiR_3, --PR_2, and hydride;

each X is chemically bonded to M;

each Cp group is chemically bonded to M;

m is an integer in the range of from 1 to 7;

n is 0 or an integer from 1 to 4;

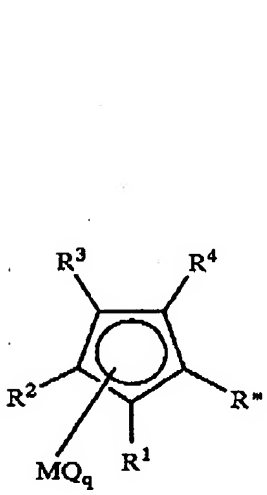
q is in the range of from 0 to 3;

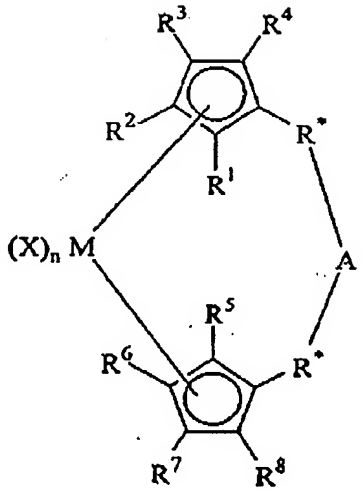
r is 0, 1 or 2;

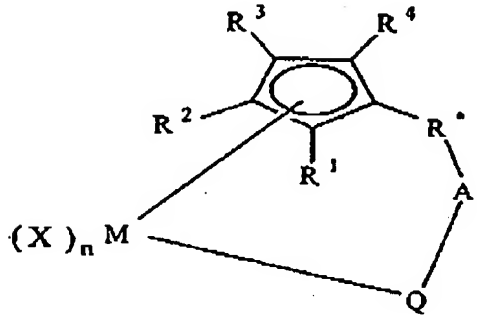
w is in the range of from 0 to 3; and

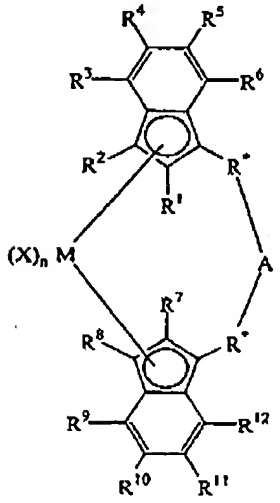
y is 1 or 2.

50. (Previously Presented) The supported, treated catalyst system of claim 48 wherein the metallocene catalyst compound is represented by a formula selected from the group consisting of:

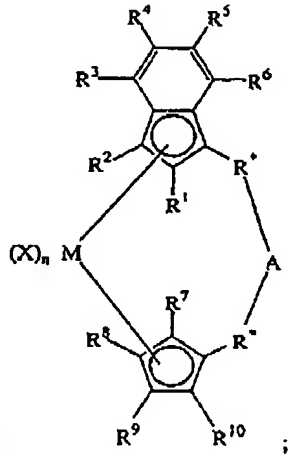








and



;

wherein M is a metal atom selected from the group consisting of: Group 3 to Group 12 metal atoms;

Q is selected from the group consisting of halogen ions, alkyls, alkylenes, aryls, arylenes, alkoxys, aryloxys, amines, alkylamines, phosphines, alkylphosphines, substituted alkyls, substituted aryls, substituted alkoxys, substituted aryloxys, substituted amines, substituted alkylamines, substituted phosphines, substituted alkylphosphines, carbamates, heteroallyls, carboxylates, fluorinated alkyls, fluorinated aryls, and fluorinated alkylcarboxylates;

q is an integer ranging from 1 to 3; each R* is independently selected from the group consisting of hydrocarbyls and heteroatom-containing hydrocarbyls;

A is a bridging group;

X is selected from the group consisting of: halogen ions, hydrides, C_1 to C_{12} alkyls, C_2 to C_{12} alkenyls, C_6 to C_{12} aryls, C_7 to C_{20} alkylaryls, C_1 to C_{12} alkoxys, C_6 to C_{16} aryloxys, C_7 to C_{18} alkylaryloxys, C_1 to C_{12} fluoroalkyls, C_6 to C_{12} fluoroaryls, C_1 to C_{12} heteroatom-containing hydrocarbons and substituted derivatives thereof; amines, phosphines, ethers, carboxylates, dienes, and hydrocarbon radicals having from 1 to 20 carbon atoms;

n is 0 or an integer from 1 to 4; and

R^1 through R^{12} are independently: selected from the group consisting of hydrogen radical, halogen radicals, C_1 to C_{12} alkyls, C_2 to C_{12} alkenyls, C_6 to C_{12} aryls, C_7 to C_{20} alkylaryls, C_1 to C_{12} alkoxys, C_1 to C_{12} fluoroalkyls, C_6 to C_{12} fluoroaryls, and C_1 to C_{12} heteroatom-containing hydrocarbons and substituted derivatives thereof.

51. (Currently Amended) A supported, treated catalyst system produced by a process comprising the steps of:

(a) forming a supported bimetallic catalyst system comprising a first catalyst compound and a second catalyst compound, wherein the second catalyst compound comprises a metallocene catalyst compound, and wherein the first and second catalyst compounds are supported on a common support; wherein the common support is an inorganic oxide; and

(b) contacting the supported bimetallic catalyst system of (a) with at least one ~~methylalumoxane-activatable~~ additional catalyst compound,

wherein the metallocene catalyst compound is selected from the group consisting of: bis(n-butylcyclopentadienyl)zirconium dichloride; bis(n-butylcyclopentadienyl)zirconium difluoride; (tetramethylcyclopentadienyl) (n-propylcyclopentadienyl)zirconium dichloride; (pentamethylcyclopentadienyl) (n-propylcyclopentadienyl)zirconium dichloride; bis(1,3-methylbutylcyclopentadienyl)zirconium dichloride; and bis(n-propylcyclopentadienyl)hafnium difluoride.

52. (Original) The supported, treated catalyst system of claim 38 wherein the supported, treated catalyst system and the supported bimetallic catalyst system each have a transition metal concentration, and wherein the supported, treated catalyst system has a higher transition metal concentration than does the supported bimetallic catalyst system.

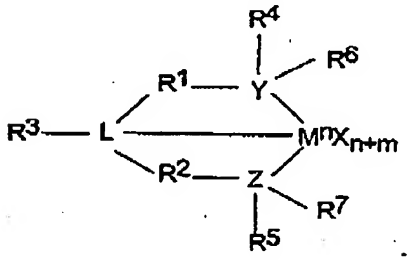
53. (Previously Presented) The supported, treated catalyst system of claim 38 wherein the first catalyst compound is a Ziegler-Natta catalyst.

54. (Original) The supported, treated catalyst system of claim 53 wherein the Ziegler-Natta catalyst comprises a compound selected from the group consisting of Group 4 and Group 5 halides, oxides, oxyhalides, alkoxides, and mixtures thereof.

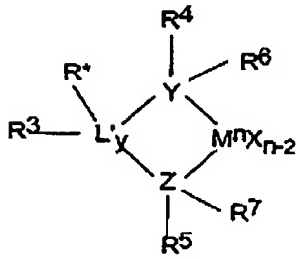
55. (Original) The supported, treated catalyst system of claim 54 wherein the Ziegler-Natta catalyst is titanium tetrachloride.

56. (Currently Amended) The supported, treated catalyst system of claim 38 wherein the at least one ~~methylalumoxane-activatable~~ additional catalyst compound is selected from the group consisting of: a metallocene catalyst compound; a Group-15-component-containing compound; a phenoxide catalyst compound; or a conventional transition metal catalyst compound.

57. (Original) The supported, treated catalyst system of claim 56 wherein the Group-15-component-containing compound is represented by a formula selected from the group consisting of:



; or



wherein M is selected from the group consisting of: Group 3 to 12 transition metals and Group 13 to 14 main group metals;

each X is a leaving group;

y is 0 or 1;

n is the oxidation state of M and is selected from the group consisting of: +3, +4, and +5;

m is the formal charge of the YZL or the YZL' ligand and is selected from the group consisting of 0, -1, -2 and -3;

L is a Group 15 or 16 element;

L' is selected from the group consisting of: a Group 15 element, a Group 16 element, and a Group 14-containing group;

Y is a Group 15 element;

Z is a Group 15 element;

R^1 and R^2 are each selected from the group consisting of: a C_1 to C_{20} hydrocarbon group, a heteroatom containing group having up to twenty carbon atoms, silicon, germanium, tin, lead, halogen and phosphorus;

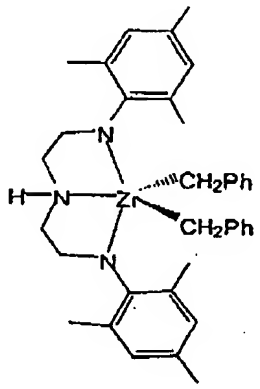
R^3 is absent or is selected from the group consisting of: a hydrocarbon group, hydrogen, a halogen, and a heteroatom containing group;

R^4 and R^5 are each selected from the group consisting of: an alkyl group, an aryl group, a substituted aryl group, a cyclic alkyl group, a substituted cyclic alkyl group, a cyclic aralkyl group, a substituted cyclic aralkyl group or multiple ring system having up to 20 carbon atoms, a C_1 to C_{20} hydrocarbon group, a C_1 to C_{20} aryl group, a C_1 to C_{20} aralkyl group, and a heteroatom containing group.

R^6 and R^7 are each absent, or are selected from the group consisting of: hydrogen, an alkyl group, a halogen, a heteroatom or a hydrocarbyl group; and

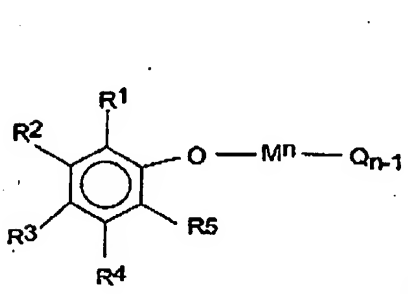
R^* is absent or is selected from the group consisting of: hydrogen, a Group 14 atom containing group, a halogen, and a heteroatom containing group.

58. (Original) The supported, treated catalyst system of claim 57 wherein the Group-15-component-containing compound is

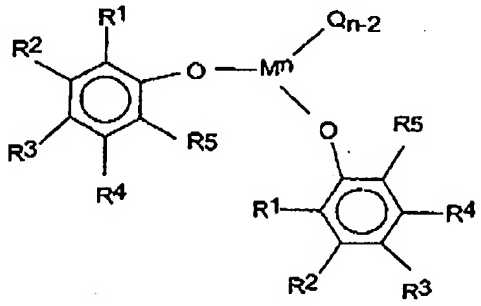


wherein Ph represents a phenyl group.

59. (Original) The supported, treated catalyst system of claim 56 wherein the phenoxide catalyst compound is represented by a formula selected from the group consisting of:



and



wherein R^1 is selected from the group consisting of: hydrogen and a C_4 to C_{100} group;

at least one of R^2 to R^5 is a heteroatom-containing group;

each of R^2 to R^5 that is not a heteroatom-containing group is selected from the group consisting of: hydrogen and a C_1 to C_{100} group;

O is oxygen;

M is selected from the group consisting of: Group 3 to Group 10 transition metals and lanthanide metals;

n is the valence state of the metal M and is selected from the group consisting of 2, 3, 4, and 5; and

Q is an alkyl, halogen, benzyl, amide, carboxylate, carbamate, thiolate, hydride or alkoxide group.

60. (Currently Amended) The supported, treated catalyst system of claim 38 wherein the ~~methylalumoxane activatable~~ at least one additional catalyst compound is selected from the group consisting of: complexes of nickel; complexes of nickel and palladium; Group 8 to 10 metal catalyst compounds containing diimine-based ligands; Group 5 and 6 metal imido complexes; bridged bi-aromatic ligand compounds; and compounds represented by the formula

$$((Z)XA_t(YJ))_qMQ_n$$

where M is a metal selected from Group 3 to 13 or lanthanide and actinide series of the Periodic Table of Elements;

Q is bonded to M and each Q is a monovalent, bivalent, or trivalent anion;

X and Y are bonded to M;

one or more of X and Y are heteroatoms;

Y is contained in a heterocyclic ring J, where J comprises from 2 to 50 non-hydrogen atoms;

Z is bonded to X, where Z comprises 1 to 50 non-hydrogen atoms;

t is 0 or 1;

A is a bridging group joined to at least one of X, Y or J;

q is 1 or 2;

n is an integer from 1 to 4.

61. (Original) The supported, treated catalyst system of claim 56 wherein the conventional transition metal catalyst is selected from the group consisting of: a Ziegler-Natta catalyst; a vanadium catalyst; and a Phillips-type catalyst.

62. (Original) The supported, treated catalyst system of claim 38 wherein an antistatic agent is present in an amount less than 2% by weight of the supported, treated catalyst system.

63. (Original) The supported, treated catalyst system of claim 38 wherein the antistatic agent is present in an amount in the range of from 0% to 1% by weight of the supported, treated catalyst system.

64. (Currently Amended) The supported, treated catalyst system of claim 38 wherein, prior to contacting with the supported catalyst, the ~~methylalumoxane activatable~~ at least one additional catalyst compound is activated.

65. (Previously Presented) The supported, treated catalyst system of claim 38 wherein the molar ratio of methylalumoxane to metallocene used is less than or equal to 150.

66. (Previously Presented) The supported, treated catalyst system of claim 38 wherein each different catalyst compound that comprises the bimetallic catalyst is supported on a single type of support such that, each particle of support material includes both the first and second catalyst component.

67. (New) A process to polymerize ethylene and one or more monomers selected from 1-butene, 1-hexene, 1-octene, and mixtures thereof using the supported, treated catalyst system of claim 38.

68. (New) A process to polymerize ethylene and one or more monomers selected from 1-butene, 1-hexene, 1-octene, and mixtures thereof using the supported, treated catalyst system of claim 51.